

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: Li et al.  
Title: SYSTEM AND METHOD FOR REGISTERING AN IMAGE WITH A  
REPRESENTATION OF A PROBE  
Serial No:  
Art Unit  
Filing Date:  
Examiner:  
Date: December 31, 2003

INFORMATION DISCLOSURE STATEMENT

ATTN: Mail Stop PATENT APPLICATION  
Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

The following are submitted in the above application in compliance with 37 CFR 1.97 and 37 CFR 1.98.

- ☒ 1. A list of documents on Form PTO-1449 or Substitute of each identified document and a translation thereof or a concise explanation of each non-English language document or a Search Report or communication from a non-US patent office or an International Search Report from an International Searching Authority for a patent application filed via the Patent Cooperation Treaty or document(s) cited in the application or the priority application.
- This paper is submitted in accordance with:
- ☒ 2. 37 CFR 1.97(b): [within three months of national, non-CPA filing, prior to first Office Action, on the merits, or prior to first office action after filing an RCE]
- ☐ 3. 37 CFR 1.97(c): [before Final Office Action, Allowance, or other action closing prosecution, whichever is earlier]; and
- ☐ a. The required Certification made in item 5 below; or
- ☐ b. The \$180.00 fee specified in 37 CFR 1.17(p) for submission of this Information Disclosure Statement is authorized in item 6 below.

CERTIFICATE OF MAILING

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 as Express Mail No. EL 979077480 US on December 31, 2003 and is addressed to Mail Stop PATENT APPLICATION, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450.

By: Carolyn Simpson Date: December 31, 2003

Name: Carolyn Simpson

4. 37 CFR 1.97(d): [on or before issue fee payment]; and

- a) The required Certification is stated in item 5 below and
- b) The \$180.00 fee specified in 37 C.F.R. 1.17(p) for submission of this Information Disclosure Statement is authorized in item 6 below.

5. Certification

- [ ] a. Each item of information contained in this Statement was first cited in any communication from a foreign patent office in a counterpart foreign patent application not more than three months prior to the filing of this Statement; or
- [ ] b. No item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign patent application and, to the knowledge of the person signing this document after making reasonable inquiry, no item of information contained in this Statement was known to any individual designated in 37 CFR 1.56(c) more than three (3) months prior to the filing date of this Statement.

6. Payment of all applicable fees:

- ☐ Please charge all applicable fees associated with the submittal of this Information Disclosure Statement to Deposit Account No. \_\_\_\_\_.
- ☐ Enclosed is a check in the amount of \$\_\_\_\_\_ in payment of all applicable fees associated with the submittal of this Information Disclosure Statement

This document is submitted in duplicate.

Respectfully submitted,

Date Dec 31, 2003

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Attorney

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Substitute for form 1449B/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  Date Submitted: December 31, 2003 <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	
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				Group Art Unit	
				Examiner Name	
Sheet 1 of 3				Attorney Docket Number 066243-0243 (141218)	

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	A-1	6,569,160		Goldin et al.	05-27-2003	
	A-2	6,565,511		Panescu et al.	05-20-2003	
	A-3	6,558,333		Gilboa et al.	05-06-2003	
	A-4	6,546,270		Golden et al.	04-08-2003	
	A-5	6,528,991		Ashe	03-04-2003	
	A-6	6,522,913		Swanson et al.	02-18-2003	
	A-7	6,516,807		Panescu et al.	02-11-2003	
	A-8	6,498,944		Ben-Haim et al.	12-24-2002	
	A-9	6,498,477		Govari et al.	12-24-2002	
	A-10	6,496,712		Dahl et al.	12-17-2002	
	A-11	6,490,475		Seeley et al.	12-03-2002	
	A-12	6,490,474		Willis et al.	12-03-2002	
	A-13	6,490,468		Panescu et al.	12-03-2002	
	A-14	6,489,961		Baxter, III et al.	12-03-2002	
	A-15	6,487,441		Swanson et al.	11-26-2002	
	A-16	6,484,118		Govari	11-19-2002	
	A-17	6,484,049		Seeley et al.	11-19-2002	
	A-18	6,458,123		Brucker et al.	10-01-2002	
	A-19	6,456,867		Reisfeld	09-24-2002	
	A-20	6,453,190		Acker et al.	09-17-2002	
	A-21	6,447,504		Ben-Haim et al.	09-10-2002	
	A-22	6,445,943		Ferre et al.	09-03-2002	
	A-23	6,427,314		Acker	08-06-2002	
	A-24	6,400,981		Govari	06-04-2002	
	A-25	6,385,476		Osadchy et al.	05-07-2002	
	A-26	6,380,732		Gilboa	04-30-2002	
	A-27	6,379,302		Kessman et al.	04-30-2002	
	A-28	6,373,240		Govari	04-16-2002	
	A-29	6,370,411		Osadchy et al	04-09-2002	
	A-30	6,368,285		Osadchy et al	04-09-2002	
	A-31	6,366,799		Acker	04-02-2002	
	A-32	6,341,231		Ferre et al.	01-22-2002	
	A-33	6,335,617		Osadchy et al	01-01-2002	
	A-34	6,332,089		Acker et al.	12-18-2001	
	A-35	6,314,310		Ben-Haim et al.	11-06-2001	
	A-36	6,301,496		Reisfeld	10-09-2001	
	A-37	6,285,898		Ben-Haim	09-04-2001	
	A-38	6,266,551		Osadchy et al	07-24-2001	
	A-39	6,256,540		Panescu et al.	07-03-2001	
	A-40	6,248,075		McGee et al.	06-19-2001	
	A-41	6,246,898		Vesely et al.	06-12-2001	
	A-42	6,246,231		Ashe	06-12-2001	

Examiner  
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

<sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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	A-43	6,240,307		Beatty et al.	05-29-2001	
	A-44	6,226,543		Gilboa et al.	05-01-2001	
	A-45	6,226,542		Reisfeld	05-01-2001	
	A-46	6,223,066		Govari	04-24-2001	
	A-47	6,216,027		Willis et al.	04-10-2001	
	A-48	6,211,666		Acker	04-03-2001	
	A-49	6,198,963		Haim et al.	03-06-2001	
	A-50	6,188,924		Swanson et al.	02-13-2001	
	A-51	6,188,355		Gilboa	02-13-2001	
	A-52	6,183,088		LoRe et al.	02-06-2001	
	A-53	6,175,756		Ferre et al.	01-16-2001	
	A-54	6,161,032		Acker	12-12-2000	
	A-55	6,147,480		Osadchy et al	11-14-2000	
	A-56	6,066,094		Ben-Haim	05-23-2000	
	A-57	6,019,725		Vesely et al.	02-01-2000	
	A-58	6,016,439		Acker	01-18-2000	
	A-59	5,983,126		Wittkamp	11-09-1999	
	A-60	5,967,980		Ferre et al.	10-19-1999	
	A-61	5,953,683		Hansen et al.	09-14-1999	
	A-62	5,928,248		Acker	07-27-1999	
	A-63	5,916,163		Panescu et al.	06-29-1999	
	A-64	5,873,822		Ferre et al.	02-23-1999	
	A-65	5,868,673		Vesely	02-09-1999	
	A-66	5,840,025		Ben-Haim	11-24-1998	
	A-67	5,833,608		Acker	11-10-1998	
	A-68	5,830,144		Vesely	11-03-1998	
	A-69	5,829,444		Ferre et al.	11-03-1998	
	A-70	5,820,568		Willis	10-13-1998	
	A-71	5,817,022		Vesely	10-06-1998	
	A-72	5,813,991		Willis et al.	09-29-1998	
	A-73	5,803,089		Ferre et al.	09-08-1998	
	A-74	5,800,352		Ferre et al.	09-01-1998	
	A-75	5,797,849		Vesely et al.	08-25-1998	
	A-76	5,795,298		Vesely et al.	08-18-1998	
	A-77	5,779,638		Vesely et al.	07-14-1998	
	A-78	5,752,513		Acker et al.	05-19-1998	
	A-79	5,744,953		Hansen	04-28-1998	
	A-80	5,738,096		Ben-Haim	04-14-1998	
	A-81	5,729,129		Acker	03-17-1998	
	A-82	5,722,402		Swanson et al.	03-03-1998	
	A-83	5,718,241		Ben-Haim et al.	02-17-1998	
	A-84	5,718,241		Ben-Haim et al.	02-17-1998	

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	A-85	5,713,946		Ben-Haim	02-03-1998	
	A-86	5,697,377		Wittkamp	12-16-1997	
	A-87	5,694,945		Ben-Haim	12-09-1997	
	A-88	5,676,673		Ferre et al.	10-14-1997	
	A-89	5,662,108		Budd et al.	09-02-1997	
	A-90	5,600,330		Blood	02-04-1997	
	A-91	5,568,809		Ben-Haim	10-29-1996	
	A-92	5,558,091		Acker et al.	09-24-1996	
	A-93	5,553,611		Budd et al.	09-10-1996	
	A-94	5,546,951		Ben-Haim	08-20-1996	
	A-95	5,515,853		Smith et al.	05-14-1996	
	A-96	5,480,422		Ben-Haim	01-02-1996	
	A-97	5,445,150		Dumoulin et al.	08-29-1995	
	A-98	5,443,489		Ben-Haim	08-22-1995	
	A-99	5,443,066		Dumoulin et al.	08-22-1995	
	A-100	5,391,199		Ben-Haim	02-21-1995	
	A-101	5,311,866		Kagan et al.	05-17-1994	
	A-102	5,297,549		Beatty et al.	03-29-1994	
	A-103	4,945,305		Blood	07-31-1990	
	A-104	4,849,692		Blood	07-18-1989	

FOREIGN PATENT DOCUMENTS						
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NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
	A-105	ASTROM, M. et al., Least Squares VCG Loop Alignment, 4 Pages	
	A-106	ASTROM M. et al., Vectorcardiographic Loop Alignment and the Measurement of Morphologic Beat-to-Beat Variability in Noisy Signals, IEEE Transactions on Biomedical Engineering, Vol. 47, No. 4, April 2000, pages 497-506	
	A-107	ASTROM M., Vectorcardiographic Loop Alignment in Ischemia Monitoring, Licentiate in Engineering Thesis, April 2000, 75 Pages	

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